

## Context effects in attitude measurement

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Context Effects in Attitude Measurement

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## **Context Effects in Attitude Measurement**

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## Context Effects in Attitude Measurement

**Abstract.** A theoretical model of the cognitive processes underlying context effects in attitude measurement is presented. The model predicts (a) the conditions under which context effects are likely to emerge; (b) their direction (i.e., assimilation or contrast); (c) their size; (d) their generalization across related items; and (f) their dependency on the mode of data collection used. Experimental research bearing on these predictions is reviewed and implications for questionnaire construction are discussed.

### 1 *Context Effects in Attitude Measurement*

Survey researchers have long been aware that attitude measurement is context dependent. Most importantly, preceding questions may influence the responses given to subsequent ones (see Payne, 1951; Schuman & Presser, 1981; Schwarz & Strack, 1991; Schwarz & Sudman, 1992; Tourangeau & Rasinski, 1988, for research examples and reviews). However, the conditions under which context effects may emerge are not well understood -- and when they emerge, it has typically been difficult to predict their direction. In the present paper, I review the key assumptions of a general theoretical model of assimilation and contrast effects in social judgment (Schwarz & Bless, 1992a) and apply this model to the emergence of question order effects in survey research. The model specifies the conditions under which question order effects emerge and predicts their direction, their size, and their generalization across related issues.

Most researchers agree that answering a survey question requires that respondents solve several tasks (see Strack & Martin, 1987; Tourangeau, 1984; Tourangeau & Rasinski, 1988). As a first step, they have to interpret the question to understand what is meant. If the question is an opinion question, they may either retrieve a previously formed opinion from memory, or they may "generate" an opinion on the spot. To do so, they need to retrieve relevant information from memory to form a judgment. Once a "private" judgment is formed in respondents' mind, respondents have to communicate it to the interviewer. To do so, they may need to format their judgment to fit the response alternatives provided by the researcher. In addition, they may wish to edit their response before they communicate it, due to influences of social desirability and situational adequacy. Accordingly, interpreting the question, generating an opinion, formatting the response, and editing are the main

psychological components of a process that starts with respondents' exposure to a survey question and ends with their overt answer.

Context effects may arise at each of these steps (see Schwarz & Strack, 1991; Strack & Martin, 1987; Tourangeau & Rasinski, 1988). In the present paper, I focus primarily on how preceding questions influence which information respondents use in making a judgment, and under which conditions preceding questions and other questionnaire variables give rise to assimilation or contrast effects.

## 2 *The Inclusion/Exclusion Model*

The key assumptions of our model (Schwarz & Bless, 1992a) draw heavily on recent research in cognitive psychology that emphasizes the dynamic nature of knowledge representations (see Barsalou, 1987, 1989; Kahneman & Miller, 1986; Martin & Tesser, 1992). We assume that individuals who are asked to form a judgment about some target stimulus first need to retrieve some cognitive representation of it. In addition, they need to determine some standard of comparison to evaluate the stimulus. Both, the representation of the target stimulus and the representation of the standard are, in part, context dependent. Individuals do not retrieve all knowledge that may bear on the stimulus, nor do they retrieve and use all knowledge that may potentially be relevant to constructing a standard. Rather, they rely on the subset of potentially relevant information that is most accessible at the time of judgment (see Bodenhausen & Wyer, 1987; Higgins, 1989; Higgins & Bargh, 1987). Accordingly, their temporary representation of the target stimulus, as well as their construction of a standard of comparison, includes information that is *chronically accessible*, and hence context independent, as well as information that is only *temporarily accessible*, due to contextual influences.

Whereas differences in the chronic accessibility of information reflect respondent characteristics, differences in the temporary accessibility of information are primarily due to questionnaire variables. Most importantly, information that has been used for answering a preceding question is particularly likely to come to mind when respondents are later asked a related question, to which it may be relevant. How the information that comes to mind influences the judgment, depends on how it is categorized, i.e., on whether it is used to construct a representation of the target or a representation of the standard or scale anchor, against which the target is evaluated.

## 2.1 *Assimilation Effects*

Information that is *included* in the temporary representation that individuals form of the target category will result in *assimilation effects*. This reflects that the judgment is based on the information that is included in the representation used. Accordingly, the addition of information with positive implications results in a more positive judgment, whereas the addition of information with negative implications results in a more negative judgment.

The size of assimilation effects increases with the amount and extremity of the temporarily accessible information, and decreases with the amount and extremity of chronically accessible information, that is included in the representation of the target. Hence, we would expect that respondents who are experts on a given issue show less pronounced assimilation effects than novices, reflecting that experts can draw on a larger set of chronically accessible information, which in turn reduces the impact of adding a given piece of temporarily accessible information. Note, however, that expert status needs to be defined with regard to the specific issue at hand. Global variables, such as years of schooling, are unlikely to moderate the size of assimilation effects, unless they are confounded with the amount of knowledge regarding the issue under consideration. Thus, it comes as little surprise that formal education has been found to show inconsistent relationships with the emergence and size of context effects.

By the same token, the impact of a given piece of information that is brought to mind by a preceding question is reduced the more additional information is brought to mind by other context questions. Hence, the impact of a given question decreases as the number of related context questions increases (e.g., Schwarz, Strack, & Mai, 1991).

## 2.2 *Contrast Effects*

According to the inclusion/exclusion model, the same piece of information that elicits an assimilation effect may also result in a *contrast effect*. We propose that this is the case when the information is *excluded* from, rather than included in, the cognitive representation formed of the target.

As a first possibility, suppose that a given piece of information with positive (negative) implications is excluded from the representation of the target category. If so, the representation will contain less positive (negative) information, resulting in less positive (negative) judgments. We call this possibility a *subtraction based* contrast effect (see

Bradburn, 1983; Schuman & Presser, 1981, for related suggestions). The size of subtraction based contrast effects increases with the amount and extremity of the temporarily accessible information that is excluded from the representation of the target, and decreases with the amount and extremity of the information that remains in the representation of the target. Hence, we would again expect, for example, that experts show less pronounced subtraction based contrast effects, reflecting that a larger amount of chronically accessible information is used in constructing the representation of the target in the first place.

As a second possibility, respondents may not only exclude accessible information from the representation formed of the target, but may also use this information in constructing a standard of comparison or scale anchor. If the implications of the temporarily accessible information are more extreme than the implications of the chronically accessible information used in constructing a standard or scale anchor, this process results in a more extreme standard, eliciting contrast effects for that reason. The size of these *comparison based* contrast effects increases with the extremity and amount of temporarily accessible information used in constructing the standard or scale anchor, and decreases with the amount and extremity of chronically accessible information used in making this construction.

Which of these processes drives the emergence of a contrast effect determines whether the contrast effect is limited to a single target or generalizes across related targets. If the contrast effect is based on the mere subtraction of information from the representation formed of the target, it is limited to the evaluation of this particular target. This simply reflects that the evaluation is based on the information "left" in the representation of the target. If the information that is excluded from the representation of the target is used in constructing a standard of comparison or scale anchor, on the other hand, contrast effects are likely to emerge on each judgment to which this standard or scale anchor is relevant.

That the model provides two related mechanisms for the emergence of contrast effects raises the question under which conditions we are likely to obtain subtraction based or comparison based contrast effects? We propose that information that is excluded from the representation of the target is only used in constructing a standard of comparison or scale anchor if it has been thought about with regard to the relevant judgmental dimension. An empirical example may clarify this point. In one of our studies (Schwarz, Münkler, & Hippler, 1990), respondents were asked to rate a number of beverages according to how "typically German" they are. In one condition, this task was preceded by a question about

the frequency with which Germans drink beer or drink vodka, respectively. If the preceding question referred to the consumption of vodka, an atypical drink for Germans, the subsequent beverages were rated as more typically German than if the preceding consumption question referred to beer. Other respondents were also asked a question about vodka or beer, respectively. However, they had to estimate the caloric content of these drinks, rather than the frequency of their consumption. In this case, the subsequent typicality ratings were unaffected by the context question. In combination, this pattern of findings indicates that respondents did only use the highly accessible drinks in constructing a standard or scale anchor when the question that brought these drinks to mind tapped the underlying dimension of frequency of consumption that is crucial to typicality judgments. If they thought about these drinks with regard to some other dimension, here their caloric content, they were not used in constructing a standard or scale anchor, despite their high accessibility in memory.

In summary, we propose that information that is excluded from the representation of the target category results in subtraction based contrast effects if it has not been thought about with regard to the underlying dimension of judgment. If it has been thought about with regard to the relevant dimension, the excluded information is likely to be used in constructing a standard or scale anchor, resulting in comparison based contrast effects. Whereas subtraction effects are limited to the evaluation of the target from which the information is excluded, comparison based contrast effects generalize to the evaluation of every target to which the standard or scale anchor is relevant.

### 2.3 *What Triggers the Exclusion of Information?*

We assume that the *default operation* is to include information that comes to mind in the representation of the target. This suggests that we should be more likely to see assimilation rather than contrast effects in survey research, an issue that should be addressed by meta-analyses. In contrast, the exclusion of information needs to be triggered by salient features of the question answering process. In principle, *any* variable that affects the categorization of information is likely to affect the emergence of assimilation and contrast effects, linking the present model to cognitive research on categorization processes in general. Schwarz and Bless (1992a) review a host of heterogeneous variables that have been shown to affect context effects in social judgment. Below, I address the ones that are of particular relevance to survey research.

These variables can be conceptualized as bearing on three decisions that respondents have to make with regard to the information that comes to mind. As shown in Figure 1, some information that comes to mind may simply be irrelevant, pertaining to issues that are unrelated to the question asked. Other information may potentially be relevant to the task at hand and respondents have to decide what to do with it. The first decision bears on why this information comes to mind. Information that seems to come to mind for the "wrong reason", e. g., because respondents are aware of the potential influence of a preceding question, is likely to be excluded (e.g., Lombardi, Higgins, & Bargh, 1987; Ottati, Riggall, Wyer, Schwarz, & Kuklinski, 1989; Strack, Schwarz, Bless, Kübler, & Wänke, 1993). The second decision bears on whether the information that comes to mind "belongs to" the target category or not. The content of preceding questions (e.g., Schwarz & Bless, 1992a), the width of the target category (e.g., Schwarz & Bless, 1992b), the extremity of the information (e.g., Herr, 1986), or its representativeness for the target category (e.g., Strack, Schwarz, & Gschneidinger, 1985) are relevant at this stage. Finally, conversational norms may determine respondents' perception of what they are supposed to do with highly accessible information (e.g., Schwarz, Strack, & Mai, 1991; Strack, Martin, & Schwarz, 1988).

Whenever *any* of these decisions results in the exclusion of information from the representation formed of the target, it will elicit a contrast effect, the size of which depends on the variables discussed above. Whether this contrast effect is limited to the target, or generalizes across related targets, depends on whether the excluded information is merely subtracted from the representation of the target or used in constructing a standard or scale anchor. Whenever the information that comes to mind is included in the representation formed of the target, on the other hand, it results in an assimilation effect, the size of which depends on the variables discussed above. Hence, the model predicts the emergence, the direction, the size, and the generalization of context effects in attitude measurement. In addition, it offers some predictions regarding the dependency of these effects on the mode of data collection used.

#### **2.4 Mode Effects**

As noted above, we assume that the default option is to include information that comes to mind, whereas the exclusion of information needs to be triggered by salient features of the question answering process. Moreover, exclusion processes require additional



cognitive work. Accordingly, we should only see them when respondents are motivated and able to engage in this extra work. Consistent with this assumption, Martin, Seta and Crela (1990) observed that a lack of motivation, or distracting subjects from engaging in cognitive work, eliminated the emergence of contrast effects that were otherwise obtained. This suggests that we should be more likely to see contrast effects the more respondents have a chance to engage in the necessary cognitive work. For example, we should be more likely to see them under the leisurely conditions of responding to a self-administered questionnaire (provided that respondents do not read all questions before answering them, thus eliminating question order; see Schwarz, Strack, Hippler, & Bishop, 1991) than under the time pressure of a telephone interview. However, data bearing on this assumed impact of the mode of data collection are not yet available.

### 3 *Implications for Questionnaire Construction*

How do these considerations bear on the emergence of assimilation and contrast effects in survey research? In this section, I review a number of different questionnaire variables, along with selective empirical evidence where available. The most important variables are the content and number of preceding questions, the generality of the target question, the spacing of related questions in the questionnaire, introductions or the lack of introductions to a block of questions, and the graphical lay-out of self-administered questionnaires.

#### 3.1 *The Content of Preceding Questions*

The content of preceding questions determines the information that becomes temporarily accessible in memory. In addition, it may determine respondents' decision of whether the information that is brought to mind does or does not "belong" to the target category they are to evaluate.

In one of our studies (Schwarz & Bless, 1992a), we asked a sample of German college students to evaluate the Christian Democratic Party that governs the Federal Republic of Germany. To do so, respondents presumably recall chronically accessible information from memory, which may include that the CDU is a conservative party, that Chancellor Kohl is a member of it, and so on. For some respondents, the party evaluation question was preceded by one of two political knowledge questions, each of which pertained to a specific

politician, namely Richard von Weizsäcker. This politician is a member of the CDU that is highly respected by Germans, independent of their party preference. To elicit the inclusion of Richard von Weizsäcker in respondents' representation of the Christian Democrats, we asked some respondents, "Do you happen to know of which party Richard von Weizsäcker has been a member for more than 20 years?".

**Table 1: Evaluation of Political Parties as a Function of the Inclusion or Exclusion of a Highly Respected Politician**

	Preceding Question about Richard von Weizsäcker		
	Party Membership	None	Presidency
Target			
Christian			
Democrats	6.5	5.2	3.4
Social			
Democrats	6.3	6.3	6.2

*Note.* N = 19 to 25 per condition. 1 = unfavorable; 11 = very favorable opinion about politicians of the respective party. Adapted from Schwarz & Bless (1992a).

As shown in the first row of Table 1, answering this question resulted in more favorable evaluations of politicians of the Christian Democratic Party, relative to a control condition in which no question about Richard von Weizsäcker was asked. This assimilation effect reflects that Richard von Weizsäcker was included in the representation formed of the CDU.

However, Richard von Weizsäcker has not only been a member of the Christian Democratic Party for several decades, but he also serves as President of the Federal Republic of Germany -- and the office of President requires that he no longer actively participates in party politics. The President as a representative figure-head of the Federal Republic is supposed to take a neutral stand on party issues, much as the Queen in the United Kingdom. This rendered him particularly suitable for the present experiment because it allowed us to ask other respondents, "Do you happen to know which office Richard von Weizsäcker holds, that sets him aside from party politics?". Answering this question should exclude Richard von Weizsäcker from the representation that respondents form of Christian Democratic Party politicians, resulting in a contrast effect. As shown in the first row of Table 1, this prediction was again confirmed, relative to the control condition.

Given that neither the party membership question nor the presidency question taps the evaluative dimension, the model predicts that the observed contrast effect reflects a mere subtraction process. According to this account, Richard von Weizsäcker was chronically accessible to some respondents in the control condition and the party membership question increased, whereas the presidency question decreased, the number of respondents who included him in their representation of the CDU. As a result, the contrast effect should be limited to evaluations of the Christian Democrats and should not generalize to evaluations of related targets. In line with this assumption, evaluations of the Social Democrats, shown in the second row of Table 1, were not affected by the context questions about Richard von Weizsäcker. Had the context questions tapped the evaluative dimension, on the other hand, the model would predict that the contrast effects generalizes across targets, reflecting that Weizsäcker would be used in constructing a standard.

In summary, we conclude that the same piece of information may result in assimilation as well as contrast effects, depending on whether it is included in, or excluded from, the representation that respondents form of the target category. In the present case, these operations were a function of the specific content of the knowledge questions asked, which not only brought Richard von Weizsäcker to mind, but also determined his inclusion in, or exclusion from, the representation constructed of the CDU.

Note, however, that context effects can only be detected if the majority of the sample shares the same evaluation of the information that comes to mind. Suppose, for example, that only half of our respondents would have thought highly of Richard von Weizsäcker, whereas the others would not have respected him. In that case, his inclusion in the representation of the CDU would have resulted in more favorable judgments for some respondents, but less favorable judgments for others. Whereas each of these effects would reflect an assimilation of the general judgment to the evaluation of Richard von Weizsäcker at the theoretical level, these effects could have canceled one another, resulting in the apparent absence of context effects in the sample as a whole. Schwarz, Strack, and Mai (1991) observed such a finding in a different content domain. In their study, thinking about one's marriage increased life-satisfaction for happily married respondents, but decreased life-satisfaction for unhappily married ones, resulting in the absence of a context effect in the sample as a whole. It is therefore important to keep in mind that context effects are conditional (see Smith, 1992): For any given respondent, the impact of the same general

cognitive process depends on the implications of the specific information that is brought to the respondent's mind. Unless we acknowledge the conditional character of context effects in our analyses, we may erroneously conclude that none were observed.

### **3.2 *The Number of Preceding Questions***

According to the model, the impact of a given piece of information depends on the amount and extremity of competing information used in constructing a representation. Accordingly, adding a given piece of information to the representation formed of the target results in a larger assimilation effect when the representation contains a small rather than a large amount of other information.

Consistent with this assumption, Schwarz, Strack, and Mai (1991) observed that answering a marital satisfaction question before answering a question about one's general life-satisfaction increased the correlation of both measures from  $r = .32$  (in the general - specific order) to  $r = .67$  (in the specific - general order) when the marital satisfaction question was the only domain satisfaction question asked, reflecting an assimilation effect. This effect was less pronounced, however, when three specific life domains (work, leisure, and marriage) were addressed prior to the general life-satisfaction question, resulting in a correlation of  $r = .42$  for marital and general life-satisfaction. Thus, the impact of information bearing on respondents' marriage was less pronounced as other information relevant to evaluating one's life became more accessible, due to a larger number of relevant context questions.

### **3.3 *The Generality of the Target Question: Category Width***

One of the most important determinants of assimilation versus contrast effects in survey practice is probably the generality of the target question. For example, a question about the trustworthiness of politicians could refer to all politicians in the U. S., to politicians of the Republican Party, or to some specified politician, Mr. Joe Doe. In psychological terms, these questions would address target categories of differential width. The first question pertains to a wide category that allows the inclusion of any U. S. politician that may come to mind, whereas the second question would only allow the inclusion of Republicans. In contrast, the last question, pertaining to Mr. Joe Doe, would not allow the inclusion of any other politician because a given person makes up a category by him- or herself (after all, Joe

Doe simply is not Bill Clinton). How would this differential category width affect the emergence of context effects?

Suppose, for example, that a preceding question asks respondents to recall some politicians who were involved in a scandal, rendering these politicians highly accessible. According to the model, the politicians involved in the scandal are members of the general category "politicians" and are therefore likely to be included in the temporary representation that respondents form of that category. If so, their evaluation of the trustworthiness of politicians in general should decrease, reflecting an assimilation effect. In contrast, however, the politicians who were involved in the scandal could not be included in the representation formed of the narrow category "Joe Doe". Hence, the scandal ridden politicians may now serve as a standard of comparison or scale anchor, resulting in a contrast effect.

*Table 2 : Evaluation of the Trustworthiness of Politicians in General and of Three Exemplars as a Function of Thinking About a Scandal*

	Scandal Question	
	Not Asked	Asked
Target		
Politicians in		
General	5.0	3.4
Specific		
Exemplars	4.9	5.6

*Note.* N = 8 per condition. 1 = not at all trustworthy; 11 = very trustworthy. Adapted from Schwarz and Bless (1992b).

A recent experiment with German respondents (Schwarz & Bless, 1992b) confirmed this prediction, as shown in Table 2. Respondents who were asked to name two politicians who were involved in a well-known scandal subsequently reported lower trust in German politicians in general. However, the same context question increased the reported trustworthiness of each of three specific politicians, although these exemplars were not particularly trustworthy to begin with. This pattern of findings reflects that the scandal ridden politicians could be included in the representation formed of "German politicians" in general, but not in the representation formed of any specific person. Given that a question about "scandals" does tap the trustworthiness dimension to which the subsequent ratings pertained, the scandal ridden politicians were now used to construct the standard or scale

anchor, resulting in a contrast effect.

In general, the inclusion/exclusion model predicts that assimilation effects are the more likely to emerge, the more inclusive the target category is. Accordingly, *general questions* that assess respondents' opinion about a wide target category, that allows for the inclusion of a variety of different information, should be most likely to show assimilation effects. On the other hand, *specific questions*, that assess respondents' opinion about a narrowly defined target, should be more likely to show contrast effects. This reflects that it is more likely that the information that comes to mind can be included in one's representation of a global rather than of a specific target.

### 3.4 *The Spacing of Items in a Questionnaire*

The spacing of items in a questionnaire may determine the direction of context effects for two different, but related, reasons. First, psychological experiments have shown that respondents exclude information that comes to mind if they assume that it does so for the "wrong" reason. For example, Lombardi, Higgins, and Bargh (1987) observed that priming effects in a person perception task were only obtained when respondents were not aware of the priming episode (see also Strack, Schwarz, Bless, Kübler, & Wänke, 1993). If respondents are aware that the information that comes to mind may only do so because it was triggered by a preceding question, they may exclude it for that reason. As a second possibility, conversational norms may induce respondents to ignore information that they have already provided in response to a specific question when they are later asked to answer a more general one. This reflects that conversational norms request us to provide information that is "new" to the recipient, rather than to reiterate information that has already been given (see Schwarz, in press; Strack & Schwarz, 1992, for more detailed discussions). Both of these possibilities may be influenced by the spacing of items and by introductions to blocks of related items, to be addressed below.

A study by Ottati, Riggle, Wyer, Schwarz, and Kuklinski (1989) bears on the impact of item spacing. They asked respondents to report their agreement with general and specific statements pertaining to civil liberties. For example, a general statement would read, "Citizens should have the right to speak freely in public." In one condition, this general statement was preceded by a specific statement that pertained to a favorable or unfavorable group, e.g., "The Parents-Teacher Association (or the Ku-Klux-Klan, respectively) should

have the right to speak freely in public".

As expected, respondents expressed a more favorable attitude toward the general statement if it was preceded by a specific one that pertained to a favorable, rather than to an unfavorable group. However, this assimilation effect was only obtained when the items were *separated* by eight filler items. If the items were presented immediately *adjacent* to one another, a contrast effect emerged. In this case, respondents reported a more favorable attitude towards the general statement if the preceding statement referred to a negative rather than positive group. This latter finding presumably reflects the exclusion of the primed information as a function of conversational norms and/or awareness of the possible influence of the preceding item. These considerations suggest that information that is primed by a preceding question is more likely to be included in the representation formed to answer a subsequent question when both questions are separated by unrelated filler items than when they are not. As a result, assimilation effects are likely to emerge in the former case, whereas contrast effects are likely to emerge in the latter.

Note, however, that this prediction does only pertain to the emergence of assimilation effects that are based on the inclusion of primed information. Some assimilation effects are not based on this process, but reflect that respondents use the content of a preceding question to interpret the meaning of an ambiguous subsequent question (see Schwarz & Strack, 1991, for a more detailed discussion). For example, Strack, Schwarz, and Wänke (1991) observed that college students were more likely to support an obscure "educational contribution" when they could infer from the context that it implied that they would receive money from the state, rather than that they would have to pay money for their education. Assimilation effects of this type occur at the level of question comprehension and reflect a deliberate effort to make sense of an ambiguous question. Hence they are likely to be obtained when the relevant context question and the ambiguous question are presented together, thus emphasizing their apparent relatedness.

### 3.5 *Introductions to Item Blocks and Graphical Lay-Outs*

As alluded to above, communicators are expected to avoid redundancy (Grice, 1975). In psycholinguistics this is known as the "given-new contract", which requires speakers to provide information that is "new", rather than to reiterate information that is already "given" (Haviland & Clark, 1974). Several studies indicate that this conversational norm is evoked

when related questions are perceived as belonging to the same conversational context (e.g., Schwarz, Strack, & Mai, 1991; Strack, Martin, & Schwarz, 1988; Strack, Schwarz, & Wänke, 1991). If the questions follow a part-whole format, using the information that has already been provided in response to a specific ("part") question in answering a subsequent more general ("whole") question, would violate the conversational norm of nonredundancy. Variables that evoke this norm are introductions to a block of related items and the graphical lay-out of self-administered questionnaires.

For example, in a study alluded to above, Schwarz, Strack, and Mai (1991) asked respondents to report their marital satisfaction and their general life-satisfaction. When the marital satisfaction question was asked as the last question on one page of the questionnaire and the general question as the first question on the next page, happily married respondents reported higher, and unhappily married respondents reported lower, general life-satisfaction than when the general question came first. This reflects an assimilation effect as discussed above. When both questions were introduced by a joint lead-in, thus assigning them to the same conversational context, respondents excluded the information that they reported in response to the specific question, much as if the question read, "Aside from your marriage, that you already told us about, how satisfied are you with other aspects of your life?" Accordingly, the joint lead-in elicited a contrast effect, with happily married respondents reporting lower life-satisfaction than unhappily married respondents.

A related study, pertaining to the graphical lay-out of self-administered questionnaires, provided a conceptual replication of this effect. Specifically, presenting the marital satisfaction question and the life-satisfaction as two separate questions, each framed by a black box, resulted in assimilation effects. Presenting both questions in a single box, thus emphasizing their relatedness, elicited contrast effects.

We conclude from this and similar findings (cf. Schwarz, in press; Strack & Schwarz, 1992) that conversational norms can trigger the exclusion of information that has already been provided from the cognitive representation formed for answering a subsequent question. Variables that can elicit the application of the conversational norm of non-redundancy include lead-ins to blocks of items as well as the graphical lay-out of self-administered questionnaires.



#### 4 Conclusions

In summary, the inclusion/exclusion model provides a conceptual framework that allows predictions regarding the emergence, direction, size, and generalization of context effects in attitude measurement. Most importantly, the model holds that any variable that influences the categorization of information that comes to mind is likely to moderate the emergence of assimilation or contrast effects. Schwarz and Bless (1992a) provide a comprehensive review of a host of different variables that have been studied in psychological research. The ones that are most relevant to questionnaire construction include the content and number of preceding questions, the width of the target category, the spacing of items in a questionnaire, the lead-in to blocks of related questions, and the graphical lay-out of self-administered questionnaires. Moreover, the model allows for the conceptualization of respondent variables, such as expertise, motivation, and cognitive ability, within the same conceptual framework, and offers a number of straightforward predictions regarding the impact of the mode of data collection. Although some of the key predictions of the model have received considerable experimental support, the evidence bearing on others is rather limited. Moreover, future research is likely to uncover additional variables that may elicit inclusion/exclusion operations. We hope, however, that the present conceptualization will provide a fruitful heuristic framework for future work in this area.

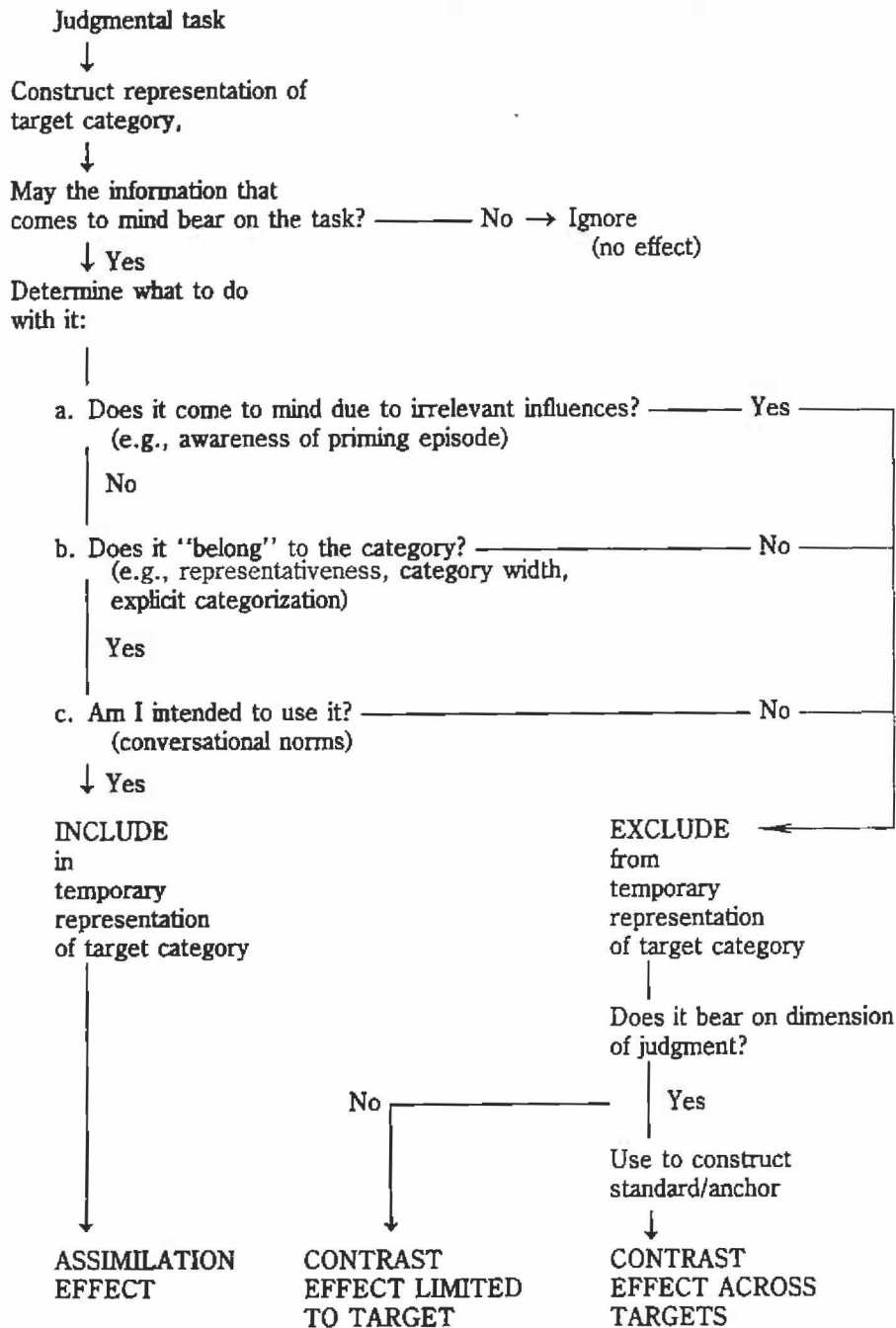
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**Figure 1**  
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***Assimilation and Contrast Effects***



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